

REMARKS

Claims 1-23 are pending in the application.

Claims 1-23 were rejected by the Examiner.

Reconsideration and allowanced of claims 1-23 is respectfully requested for the reasons explained below.

Claim Rejections – 35 U.S.C. § 103

Claims 1-4, 7, 8, 11-16 and 21-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lazarus (US Pub. No. 20030206563).

It is well known in the prior art that when modem or fax data is transmitted as Voice Band Data, the system's play-out buffer is typically set to a relatively long value. However, when a telephone call is being transmitted, the play-out buffer is normally set to a relatively short value. Furthermore, there is a large amount of technical literature devoted to various techniques for making the length of a play-out buffer adaptive during a telephone conversation so that the buffer can be as short as possible without missing a significant amount of data.

Typically, a system switches from a relatively short buffer (used for voice) to a relatively long buffer (used for fax or modem) when a fax or modem tone is detected. As explained in the applicant's specifications, in voice mode, a play-out buffer of 50ms may be appropriate and in fax mode a play-out buffer of 200ms may be appropriate. However, if a system switches from a play-out buffer of 50ms to a play-out buffer of 200ms, there will be a gap of 150ms. When a system encounters such a gap it may assume that the line was dropped and terminate the call.

Since an adaptive technique is often used to set the play-out buffer for a system operating in voice mode, one can not know what the length of the buffer will be when the switch occurs and therefore one can not know the length of the gap that will occur. The applicant's system is directed to minimizing the anomalies that occur when a system switches from voice to fax. These anomalies are minimized by setting the length of the play-out buffer in fax mode dependent upon the length of the play-out buffer in voice mode at the time the switch occurs.

Applicant's claim 1 recites:

"setting the length of the play-out buffer in a gateway when the gateway switches from audio mode to voice band data (VBD) mode by;
detecting the previous length of the play-out buffer in the previous audio mode,
adding a dilation factor to said previous length to obtain a new length, and setting said play-out buffer to said new length."
(Emphasis added.)

With the applicant's invention, the amount of change in the length of the play-out buffer is the size of dilation factor. That is, with applicant's invention, the size to which the play-out buffer is set in fax mode depends on the size the buffer had been set to in the previous voice mode.

The Lazarus reference is directed to avoiding erroneous tone detection. It is noted that if a system erroneously detects a fax tone (when one does not exist) the system will switch to a longer play-out buffer, and the telephone call will then proceed with too long of a play-out buffer. Lazarus teaches that to minimize false tone detection, the criteria used to detect a tone is modified if a tone is not detected within a certain period after the call begins.

The Lazarus reference states at paragraph 0024 that:

"When it is determined that fax or modem communications are occurring on communications link 115, it is desirable to minimize packet loss by using a longer jitter buffer.... Parameters that are optimized for fax or modem communication are detrimental to the quality (or impose a high cost) of voice communication, and vice versa. When it is determined that voice activity is occurring on communications link 1115, it is desirable to have ... short or adaptive jitter buffers to minimize delay."

Nowhere in the Lazarus reference is the exact value of the size of the play-out buffer, in voice or fax mode, specified. Lazarus assumes (correctly) that the prior art teaches appropriate values for the various parameters in both fax and voice mode.

The examiner states (page three of the office action) that Lazarus teaches:

"detecting the previous length of the play-out buffer in the previous audio mode; adding a dilation factor to said previous length to obtain a new length, and setting said play-out buffer to said new length (adaptive jitter buffers [0024]). The examiner maintains that the system must detect the length of the previous adaptive jitter buffer in the audio mode. If this were not the case, the system would not know how many memory units to add/subtract to change the buffer size from the previous adaptive audio jitter buffer size to the current adaptive jitter buffer size."

Many prior art systems that use an adaptive buffer in voice mode, change the buffer to a certain longer fixed value when a fax or modem tone is detected. Since the Lazarus reference does not say how the length of the buffer is determined in fax mode, it must be assumed that the prior art technique of setting the buffer to a longer fixed value is used. The examiner is clearly using the applicant's teaching, and saying that the Lazarus reference must work in this manner. The terms "dilation" and "dilation factor" do not appear in the Lazarus reference. There is no basis whatsoever for the examiner's assumptions.

Reconsideration and withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.

Claims 5, 6, 9, 10, 17-20 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lazarus in further view of Chan (US Patent No. 6,826,177).

The above discussion of Lazarus is applicable to this rejection and is hereby incorporated in the argument concerning this rejection.

The examiner correctly indicates that Chan teaches loss concealment; however, loss concealment is only one of the elements in these claims. Each of the claims 5, 6, 9, 10, 17-20 and 23 are dependent claims and the elements included in these claims from the claims on which they are dependent distinguish over Lazarus for the reasons explained above.

Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) based on Lazarus in view of Chan is respectfully requested.

CONCLUSION

For the foregoing reasons allowance of claims 1-23 is respectfully requested.

The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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